

Application No. 10/076,436
Request for Reconsideration
Reply to Supplemental Office Action dated May 13, 2004
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REMARKS

Claims 1-20 are currently pending in the application.

The indication that claims 3-4, 8-10, 16-17 and 20 contain allowable subject matter is noted with appreciation.

Claims 1-2, 5, 14-15 and 18 were rejected under 35 USC 103(a) as being obvious over Kamei et al. (U.S. Patent No. 6,011,467) taken with Bichsel et al. (U.S. Patent No. 4,766,306) in view of Toshima et al. (JP Patent Publication No. 1137720). Claims 6-7, 11 and 19 were rejected under 35 USC 103(a) as being obvious over Kamei et al. taken with Bichsel et al. in view of Toshima et al. as applied to claim 1, and further in view of Yabuuchi (JP Patent Publication No. 63-191218). Claims 12 and 13 were rejected under 35 USC 103(a) as being obvious over Kamei et al. taken with Bichsel et al. in view of Toshima et al. as applied to claim 1 and further in view of an obvious conclusion.

These rejections are respectfully traversed in view of the following remarks.

The present invention relates to a photoelectric switch and particularly relates to a photoelectric switch having a display

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section.

The present invention specifically discloses that, in Fig. 2, first and second display sections 17 and 18 are placed adjacent in a side by side fashion in the lengthwise direction of the top face 11a of the casing 11 at the same plane of the top face 11a. Each of the first and second display sections 17 and 18 has four subsections placed adjacent in a side by side fashion in the lengthwise direction of the top face 11a of the casing 11. Each subsection is implemented as a seven-segment LED. That is, each of the first and second display sections 17 and 18 can display four numbers or alphanumeric characters side by side. Therefore, for example, when a numeric value is displayed on the first or second display section 17 or 18, a four-digit numeric value can be displayed.

In addition, the present invention discloses that the M key 23 is used to switch display information of the first and second display sections 17 and 18 and change the displayed items in the switched display information.

The information display is roughly classified into a first information group and a second information group. The first

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information group displayed as the basic display information comprises (A) items concerning "light reception amount and/or threshold value" and (B) items concerning "operation state check". The second information group as the second display information comprises (C) items concerning "various setup items and parameters" and (D) items concerning "display".

The second display information concerns "operation function setting" and "display" in the second information group. The user can alternately select a partial display mode (Easy mode) for only displaying items concerning the basic setting of the photoelectric switch 100 or only items having a high frequency of use and necessity from among the items contained in the second information group or a full display mode (Pro mode) for displaying all items.

If the M key 23 is pressed when the character string "disp" is displayed in the first display section 17, a transition is made to the "display setting" mode of the third display information shown in FIG. 31. As the M key 23 is pressed in the "display setting" mode, three items: (1) the selection of the display mode of "Std" or "Full" in the "light reception amount

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and/or threshold value display" mode for the basic display information, (2) the eco mode switch, and (3) the display value shift switch are displayed. As the M key 23 is further pressed, the mode returns to the "light reception amount and/or threshold value display" mode of the basic display information.

Independent claim 1 recites "the second display information including a plurality of items concerning functions of said photoelectric switch; a switch for switching information to be displayed on said display section between the first display information and the second display information, and wherein when the second display information is displayed on said display section, only a part of the plurality of items or all of the plurality of items in the second display information are sequentially displayed on said display section."

Independent claim 6 recites "the second display information including a plurality of items concerning functions of said photoelectric switch, the third display information including a plurality of items concerning displays of said photoelectric switch; and a switch for switching information to be displayed on said display section among the first display information, the

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second display information, and the third display information."

Independent claim 12 recites "the second display information including items concerning basic operation setting of said photoelectric switch and items concerning the other operational settings of said photoelectric switch, the second display information further including a fifth selection item for selecting a first display information or the items concerning the other operational settings of said photoelectric switch in the second display information to display the selected items on said display section; a switch for switching information to be displayed on said display section between the first display information and the second display information, and wherein the fifth selection item is displayed on said display section after the items concerning basic operation setting of said photoelectric switch are displayed on said display section."

Independent claim 14 recites "the second display information including a second plurality of items concerning functions of said photoelectric switch; a switch including means for switching information to be displayed on said display section between the first display information and the second display information, and

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means for sequentially displaying some of the second plurality of items and means for sequentially displaying all of the second plurality of items when the second display information is displayed on said display section."

Independent claim 19 recites "the second display information including a plurality of items concerning functions of said photoelectric switch, the third display information including a plurality of items concerning displays of said photoelectric switch; and a switch including means for switching information to be displayed on said display section among the first display information, the second display information, and the third display information." These features are not shown or suggested in Kamei et al. or the other prior art references of record.

Kamei et al. relate to a sensing device and a display method in the sensing device.

Kamei et al. disclose that, in Fig. 2, the display unit 20 includes a display device 21 (a feature quantity display device) for displaying the received light level, a display device 22 (a threshold display device) for displaying the threshold level and an output indicator lamp 23. The received light level display

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device 21 comprises a plurality of (eight in this embodiment) indicator lamps 21a-21h each realized by a light-emitting diode (LED) arranged in a vertical line to form a column (a bar graph display device), and an LED or LEDs, a number of which corresponds to the received light level is lighted in ascending order from the lowermost one.

Kamei et al. also disclose that the threshold level display device 22 comprises a plurality of (seven in this embodiment) indicator lamps 22a-22g each realized by an LED arranged in a vertical line and adjacent to the indicator lamps of the received light level display device 21.

Kamei et al. also disclose that the threshold level indicator lamp is positioned in the middle of the two adjacent received light level indicator lamps. The lighted indicator lamp(s) (LED) of the display device 22 represents the threshold level.

However, as the Examiner admitted, Kamei et al. do not disclose that the second display information including a plurality of items concerning functions of the photoelectric switch; a switch for switching information to be displayed on the

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display section between the first display information and the second display information, and wherein when the second display information is displayed on the display section, only a part of the plurality of items or all of the plurality of items in the second display information are sequentially displayed on the display section as recited in claim 1.

Kamei et al. also do not disclose that the second display information including a plurality of items concerning functions of said photoelectric switch, the third display information including a plurality of items concerning displays of said photoelectric switch; and a switch for switching information to be displayed on said display section among the first display information, the second display information, and the third display information as recited in claim 6.

Kamei et al. also do not disclose that the second display information including items concerning basic operation setting of said photoelectric switch and items concerning the other operational settings of said photoelectric switch, the second display information further including a fifth selection item for selecting a first display information or the items concerning the

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other operational settings of said photoelectric switch in the second display information to display the selected items on said display section; a switch for switching information to be displayed on said display section between the first display information and the second display information, and wherein the fifth selection item is displayed on said display section after the items concerning basic operation setting of said photoelectric switch are displayed on said display section as recited in claim 12.

Kamei et al. also do not disclose that the second display information including a second plurality of items concerning functions of said photoelectric switch; a switch including means for switching information to be displayed on said display section between the first display information and the second display information, and means for sequentially displaying some of the second plurality of items and means for sequentially displaying all of the second plurality of items when the second display information is displayed on said display section as recited in claim 14.

Kamei et al. also do not disclose that the second display

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information including a plurality of items concerning functions of said photoelectric switch, the third display information including a plurality of items concerning displays of said photoelectric switch; and a switch including means for switching information to be displayed on said display section among the first display information, the second display information, and the third display information as recited in claim 19.

Applicant believes that Kamei et al. disclose that there are two different displays, namely, the received light level display and the threshold level display. The received light level display is used for displaying the received high level. The threshold level display is used for the threshold level. Applicant respectfully submits that there is no display as described in the present invention because each of the displays in Kamei et al. displays only one information and the display information is not changeable for other information.

For these reasons, it is believed that Kamei et al. do not show or suggest the present claimed features of the present invention.

Applicant also submits that Bichsel et al. do not make up

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for the deficiencies in Kamei et al.

Bichsel et al. relate to an apparatus for controlling a load by means of a photodetector. More particularly, Bichsel et al. relates to the apparatus wherein a pushbutton, a knob or another suitable actuator can constitute an optomechanical transducer which initiates necessary changes in the condition of a load operating circuit.

Bichsel et al. disclose that the electrooptical transducer 1 comprises a first radiation source 4, a second radiation source 5, a photodetector 6, an energy source 8, a load operating circuit which includes a switch 9, and a device 9a for changing the intensity of radiation which issues from the source 5 (e.g., between zero and maximum intensity).

Bichsel et al. also disclose that the intensity changing device 9a can receive an appropriate signal in response to actuation of the switch 9 in the load operating circuit.

Bichsel et al. also disclose that the switch 9 causes the device 9a to change the intensity of radiation which issues from the source 5, e.g., from zero to a maximum value. Such radiation propagates itself by way of the conductors 11, 2 and passes

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through the mirror 38 to illuminate a cover 32 in a depressible pushbutton or knob 29 of the optomechanical transducer 3 so that the cover 32 displays or signals the condition of the load operating circuit.

Bichsel et al. do not disclose that the second display information including a plurality of items concerning functions of the photoelectric switch; a switch for switching information to be displayed on the display section between the first display information and the second display information, and wherein when the second display information is displayed on the display section, only a part of the plurality of items or all of the plurality of items in the second display information are sequentially displayed on the display section as recited in claim 1.

Bichsel et al. also do not disclose that the second display information including a plurality of items concerning functions of said photoelectric switch, the third display information including a plurality of items concerning displays of said photoelectric switch; and a switch for switching information to be displayed on said display section among the first display

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information, the second display information, and the third display information as recited in claim 6.

Bichsel et al. also do not disclose that the second display information including items concerning basic operation setting of said photoelectric switch and items concerning the other operational settings of said photoelectric switch, the second display information further including a fifth selection item for selecting a first display information or the items concerning the other operational settings of said photoelectric switch in the second display information to display the selected items on said display section; a switch for switching information to be displayed on said display section between the first display information and the second display information, and wherein the fifth selection item is displayed on said display section after the items concerning basic operation setting of said photoelectric switch are displayed on said display section as recited in claim 12.

Bichsel et al. also do not disclose that the second display information including a second plurality of items concerning functions of said photoelectric switch; a switch including means

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for switching information to be displayed on said display section between the first display information and the second display information, and means for sequentially displaying some of the second plurality of items and means for sequentially displaying all of the second plurality of items when the second display information is displayed on said display section as recited in claim 14.

Bichsel et al. also do not disclose that the second display information including a plurality of items concerning functions of said photoelectric switch, the third display information including a plurality of items concerning displays of said photoelectric switch; and a switch including means for switching information to be displayed on said display section among the first display information, the second display information, and the third display information as recited in claim 19.

Applicant believes that Bichsel et al. disclose a photoelectric switch but the switch only causes the device to change the intensity of radiation. In other words, the device with the photoelectric switch displays the condition of the intensity of radiation which is not display information.

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Applicant respectfully submits that Bichsel et al. do not teach or suggest the switch changes the display information as claimed in the present invention.

Applicant believes that one of ordinary skill in the art would not combine Kamei et al. and Bichsel et al. because there is no teaching of switching the display information in Bichsel et al. and the display of the Kamei et al. displays only one information as described above.

For these reasons, applicant respectfully submits that one of ordinary skill in the art would not have combined Kamei et al. and Bichsel et al. to meet the limitations of the present claims. Applicant also submits that Toshima et al. do not make up for the deficiencies in Kamei et al. and Bichsel et al.

Toshima et al. relate to a video game machine 30 includes a flash memory and a floppy disk drive, wherein the data on the exercise count, the response time and the elapsed time can be stored in the flash memory or the floppy disk.

Toshima et al. also disclose that the stored data can be input and displayed in various modes on a television monitor 20. According to the electric output count from a photoelectric

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switch and the elapsed time, a series of images carried with association with the contents are sequentially displayed on the screen to give the pleasure and a feeling of accomplishment to a display on the screen to give pleasure and a feeling of accomplishment to a user.

Toshima et al. do not disclose that the second display information including a plurality of items concerning functions of the photoelectric switch; a switch for switching information to be displayed on the display section between the first display information and the second display information, and wherein when the second display information is displayed on the display section, only a part of the plurality of items or all of the plurality of items in the second display information are sequentially displayed on the display section as recited in claim 1.

Toshima et al. also do not disclose that the second display information including a plurality of items concerning functions of said photoelectric switch, the third display information including a plurality of items concerning displays of said photoelectric switch; and a switch for switching information to

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be displayed on said display section among the first display information, the second display information, and the third display information as recited in claim 6.

Toshima et al. do not disclose that the second display information including items concerning basic operation setting of said photoelectric switch and items concerning the other operational settings of said photoelectric switch, the second display information further including a fifth selection item for selecting a first display information or the items concerning the other operational settings of said photoelectric switch in the second display information to display the selected items on said display section; a switch for switching information to be displayed on said display section between the first display information and the second display information, and wherein the fifth selection item is displayed on said display section after the items concerning basic operation setting of said photoelectric switch are displayed on said display section as recited in claim 12.

Toshima et al. do not disclose that the second display information including a second plurality of items concerning

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functions of said photoelectric switch; a switch including means for switching information to be displayed on said display section between the first display information and the second display information, and means for sequentially displaying some of the second plurality of items and means for sequentially displaying all of the second plurality of items when the second display information is displayed on said display section as recited in claim 14.

Toshima et al. do not disclose that the second display information including a plurality of items concerning functions of said photoelectric switch, the third display information including a plurality of items concerning displays of said photoelectric switch; and a switch including means for switching information to be displayed on said display section among the first display information, the second display information, and the third display information as recited in claim 19.

Applicant believes that one of ordinary skill in the art would not combine Toshima et al. with Kamei et al. and Bichsel et al. because the display of Toshima et al. uses a television monitor with completely different features and purposes.

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Applicant also believes that one of ordinary skill in the art would not combine the television monitor of Toshima et al. and the photoelectric switch to display the display information. Moreover, the purpose of using the television monitor in Toshima et al. is that the user (patient) can have the pleasure and a feeling of accomplishment by the series of images while the user is doing rehabilitation. Therefore, the display would not be used in a photoelectric switch.

Therefore, applicant respectfully submits that one of ordinary skill in the art would not have combined Toshima et al., Kamei et al. and Bichsel et al. to meet the limitations of the present claims.

Applicant also submits that Yabuuchi does not make up for the deficiencies in Kamei et al., Bichsel et al. and Toshima et al.

Yabuuchi relates to an optical touch switch display. Yabuuchi discloses that a CPU compares the operation input coordinates given from photoelectric sensors 2 with the picture element coordinates of the switch display areas 11-14 and blank areas 15-17.

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Yabuuchi also discloses that the CPU 20 invalidates the switch input when plural switch display areas are simultaneously operated and validates the switch input of only the switch display areas in case both switch display and blank areas are operated at one time.

Yabuuchi does not disclose that the second display information including a plurality of items concerning functions of the photoelectric switch; a switch for switching information to be displayed on the display section between the first display information and the second display information, and wherein when the second display information is displayed on the display section, only a part of the plurality of items or all of the plurality of items in the second display information are sequentially displayed on the display section as recited in claim 1.

Yabuuchi also does not disclose that the second display information including a plurality of items concerning functions of said photoelectric switch, the third display information including a plurality of items concerning displays of said photoelectric switch; and a switch for switching information to

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be displayed on said display section among the first display information, the second display information, and the third display information as recited in claim 6.

Yabuuchi also does not disclose that the second display information including items concerning basic operation setting of said photoelectric switch and items concerning the other operational settings of said photoelectric switch, the second display information further including a fifth selection item for selecting a first display information or the items concerning the other operational settings of said photoelectric switch in the second display information to display the selected items on said display section; a switch for switching information to be displayed on said display section between the first display information and the second display information, and wherein the fifth selection item is displayed on said display section after the items concerning basic operation setting of said photoelectric switch are displayed on said display section as recited in claim 12.

Yabuuchi also does not disclose that the second display information including a second plurality of items concerning

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functions of said photoelectric switch; a switch including means for switching information to be displayed on said display section between the first display information and the second display information, and means for sequentially displaying some of the second plurality of items and means for sequentially displaying all of the second plurality of items when the second display information is displayed on said display section as recited in claim 14.

Yabuuchi also does not disclose that the second display information including a plurality of items concerning functions of said photoelectric switch, the third display information including a plurality of items concerning displays of said photoelectric switch; and a switch including means for switching information to be displayed on said display section among the first display information, the second display information, and the third display information as recited in claim 19.

Applicant believes that Yabuuchi disclose an optical switch but the switch is not used for changing the display information. The optical touch switch of Yabuuchi is just an ordinary touch panel on the optical sensor. Applicant respectfully submits that

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Yabuuchi does not teach or suggest that the switch changes the display information as claimed in the present invention. Also, applicant believes that one of ordinary skill in the art would not combine Yabuuchi, Kamei et al., Bichsel et al. and Toshima et al. because of the reasons given above.

Therefore, applicant respectfully submits that one of ordinary skill in the art would not have combined Kamei et al., Bichsel et al., Toshima et al. and Yabuuchi to meet the limitations of the present claims.

It is respectfully submitted that Kamei et al., Bichsel et al., Toshima et al. and Yabuuchi, individually or in combination, do not teach, disclose or suggest the presently claimed invention and it would not have been obvious to one of ordinary skill in the art to combine these references to render the present claims obvious. Further, there is no teaching or suggestion in these references for these combinations.

In view of foregoing remarks, it is respectfully submitted that the application is now in condition for allowance and an action to this effect is respectfully requested.

If there are any questions or concerns regarding the

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amendments or these remarks, the Examiner is requested to telephone the undersigned at the telephone number listed below.

Respectfully submitted,


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